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Increase in observed mental health difficulties one year after acute coronary syndrome: general practitioner survey.

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Increase in observed mental health difficulties one year after acute coronary syndrome: general practitioner survey

Abstract

Background

General practitioners (GPs) are often the first to assess mental health difficulties after acute coronary syndrome (ACS).

Aims

To determine whether GPs observed an increase in mental health difficulties one year post-hospitalisation for ACS.

Methods

Postal survey.

Results

GPs rated patients (n=442) as having probable (GP assessed–10%) or definite (formally assessed–7%) mental health difficulties pre-hospitalisation. Post-hospitalisation the prevalence of probable cases increased significantly to 19% (OR=4.3, 95%CI 2.1–10.2, p<0.001). In multivariate analysis, only smoking at index hospitalisation was associated with being assessed as a new case of probable/formal mental health difficulties (RR=2.1, 95%CI 1.3–3.4, p=0.003). 47% of cases were prescribed some medication for this problem.

Conclusions

GPs recorded a significant increase in mental health difficulties in ACS patients 12 months after hospitalisation, with smoking used as an indicator of new cases.

Keywords: acute coronary syndrome; depression; longitudinal studies; myocardial infarction; psychological disorders; primary care

Introduction

Various mental health difficulties such as anxiety and depression are prevalent in those with acute coronary syndrome (ACS: myocardial infarction or unstable angina), and such difficulties are associated with poorer mortality, morbidity and psychosocial prognosis.[1-3] Correlates of mental health difficulties in those with ACS are younger age, female sex, socioeconomic status and smoking.[2-5] Previous research has shown that mental health problems are under-diagnosed post-ACS.[6] Furthermore, a mental health diagnosis by general practitioners (GPs) may not lead to subsequent treatment or benefit for these patients.[7, 8] GPs are often the first point of contact for those with mental health difficulties after ACS but have been criticised for failing to diagnose mental health disorders during visits to their clinics.[9, 10] However, since primary care typically involves multiple visits, it may be that GPs assess potential problems over several appointments, and thus previous results may underestimate GPs proficiency for identifying those with significant mental health difficulties.[10] We surveyed GPs of a national sample of patients with ACS to determine the following: i) prevalence of mental health difficulties before and after index hospitalisation, ii) variables associated with GP assessments of such difficulties, iii) the use of prescribed pharmacotherapy for such difficulties.

Method

Participants

Patients were a consecutive national sample admitted with suspected ACS and evaluated one year later (as described previously[3, 11]). GPs of 822 patients with confirmed ACS were surveyed one year post-hospitalisation.

Procedure

The baseline methodology has been described previously.[11] Briefly, a national survey of ACS was conducted, during which patients were asked for consent to participate in a one-year outcomes survey. One-year mortality and secondary prevention outcomes are described elsewhere.[3,12] Ethics committee approval was obtained from individual centres/areas as appropriate.[13] Each GP was sent a letter and questionnaire requesting information on their patient's vital status one year post-event. The questionnaire asked GPs to provide mental health ratings (depression, anxiety or other) before and after the index hospitalisation. Ratings were defined as none, probable (as assessed by GPs only) or definite (formally assessed).

Statistical analysis

Analysis accounted for the original clustering of patients within hospitals by using STATA/SE 8.2 (StataCorp LP, Texas, USA) robust variance estimation commands. McNemar's exact test calculated odds-ratios (ORs) for matched observations between baseline and one year. Binary regression elicited relative risks (RRs) for outcomes. Variables were dichotomised for binary regression analyses: Formal assessment and GP assessments of mental health difficulties were collapsed into one category (having mental health problems or not). Mental health assessment was predicted in multivariate analysis (controlling for age (as a continuous variable), sex, having private health insurance, smoking and a prior history of ACS (i.e. before index hospitalisation)).

Results

Response rates

The survey encompassed 681 GPs/practices, of which 411 (60%) completed a questionnaire. These GPs were asked about 822 patients, and a questionnaire was received for 475 (58%). Of these, 442 GPs answered the question on mental health difficulties. GPs were less likely to respond if patients were older (RR=0.99 for one year increase, 95% CI 0.99–1.0, p=0.019), and more likely to respond if patients had private health insurance (RR=1.1, 95% CI 1.0–1.3, p=0.05).

Patient profile

Those assessed as having probable or definite mental health difficulties pre-hospitalisation were less likely to have private health insurance, were marginally more likely to have a prior positive history of ACS, and were marginally less likely to be men (Table 1).

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Table 1 about here

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However, multivariate analysis containing all variables (Table 1) showed that all variables except smoking at index hospitalisation were associated with the likelihood of being assessed with mental health difficulties.

Prevalence of mental health difficulties

GPs rated 17% of patients as having significant mental health problems prior to the hospitalisation for ACS. Patients were rated as having probable (GP assessed) mental health problems (10%), or definite (formally assessed) mental health problems (7%). Depression was listed for 39/76 (51%) (or 11% of the overall sample) of patients, and a similar prevalence (51%) of anxiety was reported.

The prevalence of formally assessed mental health problems was similar after the index admission (6%) (OR=0.8, 95% CI 0.3–2.2, p=0.824), but the prevalence of 'probable' cases (as assessed by GPs) increased significantly, from 10% to 19% (OR=4.3, 95% CI 2.1–10.2, p<0.001). Depression was listed as the prevailing mental health problem for 51/107 (48%) (or 12% of overall sample) of those identified as having problems by their GPs, while 56% of were identified as having anxiety.

Predictors of new cases with mental health difficulties

For the 9% of additional cases of GP-assessed mental health difficulties post-ACS, medical and demographic variables were analysed to determine what factors were associated with GP assessments of these new cases. Analysis showed that those who reported smoking at hospitalisation were about twice as likely to be assessed by GPs as having mental health difficulties in both univariate and multivariate analysis (Table 2). Those with a prior history of ACS were half as likely to be belatedly assessed with mental health difficulties, but this significant association disappeared when controlling for other variables.

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Table 2 about here

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Medications for mental health difficulties

GPs were asked what medications the patients were prescribed one year post-event. Antidepressants, anxiolytics and sleeping medications were prescribed to 9%, 8% and 11% of the current sample respectively (21% were prescribed a least one of these medications). Of those with an assessment of probable or formal mental health difficulties post-event (25%), 47% were recorded as taking some psychotropic medication (i.e. anti-depressants (29%), anxiolytics (21%) or sleep medication (19%)). The proportion of patients with some assessment of mental health difficulties taking anti-depressant or anxiolytic medication was 39%. For those newly assessed as having mental health difficulties (9%), 28% were prescribed anti-depressant (15%), anxiolytic (8%) or sleep (10%) medications. There were no significant associations with age, sex, private health insurance or established history of ACS (data not shown).

Discussion

Response rate

Response rates for the present study were comparable with international response for postal surveys of GPs (52-61%).[14] Non-response by GPs was associated with patient age and patient private health insurance status. Despite these biases, the findings should have a degree of generalisability.

Prevalence of mental health difficulties

GPs recorded that 17% of patients had significant mental health difficulties prior to their hospitalisation for ACS. This is significantly higher than proportions of those with depression and/or anxiety reported in surveys of community samples, and is comparable to proportions seen in hospitalised samples.[2, 15] This supports previous findings of a significant association between mental health difficulties and cardiovascular disease. Depression measured in-hospital in those with ACS predicts subsequent morbidity and mortality.[2, 12] The current findings suggest that researchers should try to account for a history of mental health difficulties prior to hospitalisation, as these difficulties may already be present prior to an acute event. However, although GPs indicated that patients had mental health problems prior to admission, there is no way of knowing how long prior to the event that these mental health difficulties occurred. Therefore, caution should be used when interpreting these results.

Interestingly, the proportion recorded as having probable (GP assessed) mental health problems increased significantly after the acute event, almost doubling from 10% to 19%. Depression and anxiety were listed as the main outcomes both before and after the index hospitalisation. That the prevalence of formally assessed mental health problems was similar after the index admission (7% v 6%) shows that GPs did not refer these probable cases for further formal assessment. Why this is the case is unclear. However, it may be that GPs assess these difficulties post-event as transient responses to a life-threatening event, or GPs may be waiting to determine the severity of the event over time. Alternatively, they may assume that these difficulties are being addressed in outpatients programmes. GPs have previously been criticised for not recognising mental health difficulties,[9, 10] but this research shows that over time GPs are likely to observe significant difficulties. This finding supports other research which shows that GPs notice mental health problems over a period of time.[10]

Predictors of mental health difficulties

Mental health difficulties prior to hospitalisation were associated with younger age, sex, and socioeconomic status (i.e. not having private insurance). This supports other well-established research findings,[2, 15] and hints at the **correctness** of the current findings.

Patients smoking at baseline were more likely to be assessed as having mental health difficulties post-event. This suggests that GPs may be using smoking status as a strong indicator of potential mental health problems in those with ACS. In the patient sample reported previously,[3] those depressed at baseline were more likely to continue smoking. This provides support for this method of assessing mental health difficulties.

Surprisingly, those with a prior history of ACS were less likely to be newly assessed as having probable (GP assessed) mental health difficulties. This finding appears to be in contrast with findings outlined above and other research showing that those with prior coronary heart disease are more likely to have mental health difficulties.[1, 2, 16-18] However, previous research has also shown that those with myocardial infarction or angina were no more likely to be diagnosed with depression by GPs than those without cardiovascular disease.[19] One possible explanation is that these patients had already been brought to the attention of their GPs due to their prior history, and had previously been assessed as having no such difficulties. Therefore, GPs may consider that if they had no difficulties

after the previous event(s), they are less likely to have difficulties after the most recent event. Further research is required to determine the exact reasons for this association.

Medications for mental health difficulties

Those whom GPs rated as having some mental health difficulties in the year post-event were being prescribed some form of relevant medication (anti-depressants, anxiolytics or sleeping medication) in almost half of cases (47%). It is not known from the data if GPs are offering verbal advice to those patients whom they rate as having existing mental health difficulties, but who are not currently prescribed medications. Similarly, over one quarter (28%) of new cases were prescribed anti-depressant, anxiolytic or sleeping medications at one year. It may be that GPs are waiting to determine the severity of these new cases before prescribing further medications for mental health, or that physicians are reluctant to prescribe further medication for patients already taking several different kinds.[19]

Conclusion

A significant increase in mental health difficulties was recorded in those with ACS by their GPs in the year after hospitalisation. Mental health difficulties were treated with pharmacotherapy in a substantial proportion of eligible patients. GPs used smoking status as an indication that patients had probable mental health difficulties. Future research should investigate the possible reasons for this finding, and the exact mechanisms GPs use to assess mental health in those with ACS.

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References

1. Sirois BC, Burg MM. Negative emotion and coronary heart disease. A review. *Behav Modif* 2003;27:83-102.
2. Lett HS, Blumenthal JA, Babyak MA, Sherwood A, Strauman T, Robins C, et al. Depression as a risk factor for coronary artery disease: evidence, mechanisms, and treatment. *Psychosom Med* 2004;66:305-315.
3. McGee H, Doyle F, Delaharpe D, Shelley E, Conroy R. Impact of briefly-assessed depression on secondary prevention outcomes after acute coronary syndrome: a one-year longitudinal survey. *BMC Health Serv Res* 2006;6:9.

4. Bjerkeset O, Nordahl HM, Mykletun A, Holmen J, Dahl AA. Anxiety and depression following myocardial infarction: gender differences in a 5-year prospective study. *J Psychosom Res* 2005;58:153-61.
5. Schneiderman N, Saab PG, Catellier DJ, Powell LH, DeBusk RF, Williams RB, et al. Psychosocial treatment within sex by ethnicity subgroups in the Enhancing Recovery in Coronary Heart Disease clinical trial. *Psychosom Med* 2004;66:475-83.
6. Musselman DL, Evans DL, Nemeroff CB. The relationship of depression to cardiovascular disease: epidemiology, biology, and treatment. *Arch Gen Psychiatry* 1998;55:580-92.
7. Marshall KL, Deane FP. General practitioners' detection and management of patients with a dual diagnosis: implications for education and training. *Drug Alcohol Rev* 2004;23:455-62.
8. Dowrick C, Buchan I. Twelve month outcome of depression in general practice: does detection or disclosure make a difference? *BMJ* 1995;311:1274-6.
9. Gilbody S, Whitty P, Grimshaw J, Thomas R. Educational and organizational interventions to improve the management of depression in primary care: a systematic review. *JAMA* 2003;289:3145-51.
10. Kessler D, Bennewith O, Lewis G, Sharp D. Detection of depression and anxiety in primary care: follow up study. *BMJ* 2002;325:1016-7.
11. Doyle F, De La Harpe D, McGee H, Shelley E, Conroy R. Nine-year comparison of presentation and management of acute coronary syndromes in Ireland: a national cross-sectional survey. *BMC Cardiovasc Disord* 2005;5:5.
12. Doyle F, McGee HM, De La Harpe D, Shelley E, Conroy R. The Hospital Anxiety and Depression Scale depression subscale, but not the Beck Depression Inventory-Fast Scale, identifies patients with acute coronary syndrome at elevated risk of 1-year mortality. *J Psychosom Res* 2006;60:461-7.
13. Smith M, Doyle F, McGee HM, De La Harpe D. Ethical approval for national studies in Ireland: an illustration of current challenges. *Ir J Med Sci* 2004;173:72-74.
14. Cummings SM, Savitz LA, Konrad TR. Reported response rates to mailed physician questionnaires. *Health Serv Res* 2001;35:1347-55.
15. Jacobi F, Rosi S, Faravelli C, Goodwin R, Arbabzadeh-Bouchez S, Lepine J-P. The Epidemiology of Mood Disorders. In: Griez EJL, Faravelli C, Nutt DJ, Zohar J, editors. *Mood disorders: Clinical management and research issues*. New York: John Wiley & Sons Ltd.; 2005. p. 3-34.
16. Hemingway H, Marmot M. Evidence based cardiology: psychosocial factors in the aetiology and prognosis of coronary heart disease. Systematic review of prospective cohort studies. *BMJ* 1999;318:1460-7.
17. Kubzansky LD, Kawachi I. Going to the heart of the matter: do negative emotions cause coronary heart disease? *J Psychosom Res* 2000;48:323-37.
18. Smith DF. Negative emotions and coronary heart disease: causally related or merely coexistent? A review. *Scand J Psychol* 2001;42:57-69.
19. Bogner HR, Ford DE, Gallo JJ. The role of cardiovascular disease in the identification and management of depression by primary care physicians. *Am J Geriatr Psychiatry* 2006;14:71-8.

Table 1: Comparative profile of patients with and without significant mental health difficulties (GP or formally assessed) prior to index hospitalisation, showing univariate and multivariate associations with formal/GP assessments of mental health difficulties pre–event

	No mental health difficulties post–hospitalisation (83%)	Formal/ probable mental health difficulties pre–hospitalisation (17%)	Univariate			Multivariate (all 5 variables combined)		
			RR	95% CI	p	RR	95% CI	p
Age (years)(std dev)	63.1 (12.4)	60.4 (11.7)	0.99	0.97–1.00	0.143	0.97	0.96–0.99	<0.001***
Men	75%	64%	0.7	0.4–1.0	0.063	0.5	0.4–0.7	<0.001***
Private insurance	40%	20%	0.4	0.3–0.7	0.001*	0.4	0.3–0.7	0.001*
Smoking at hospitalisation	39%	48%	1.4	0.9–2.1	0.156	1.3	0.8–1.9	0.266
Prior history of ACS	34%	46%	1.5	1.0–2.3	0.059	2.0	1.3–3.0	0.001*

*p<0.05, **p<0.001, ***p<0.001

Table 2: Univariate and multivariate associations of ***new*** cases of mental health difficulties (formal/GP assessments) post–event

	Univariate				Multivariate		
	RR	95% CI	p		RR	95% CI	p
Age	0.99	0.97–1.02	0.550		1.01	0.99–1.03	0.693
Men	0.7	0.4–1.5	0.381		0.7	0.4–1.5	0.349
Private insurance	1.3	0.8–2.1	0.388		1.3	0.8–2.3	0.307
Smoking at hospitalisation	1.9	1.1–3.2	0.017*		2.1	1.3–3.4	0.003*
Prior history of ACS	0.5	0.3–0.9	0.023*		0.6	0.4–1.1	0.114

*p<0.05